DEFINITIONS AND PROCEDURES FOR IDENTIFYING AND DELINEATING FOREST LAND

For use in

soil survey phase,

National Inventory of Soil

and Water Conservation Needs

Forest Service
U. S. Department of Agriculture

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DEFINITIONS AND PROCEDURES FOR IDENTIFYING AND DELINEATING FOREST LAND

The purpose of the following definitions and procedures is to enable soil survey technicians to identify and delineate land into forest and nonforest according to specifications used on the Forest Survey. The identification and delineation will be done for all forest land in tracts of 3 acres or more on the sample areas to be mapped in the soil survey phase of the National Inventory of Soil and Water Conservation Needs. These sample areas will be mapped by ground examination with aerial photos in hand.

Forest land will be found in two broad categories: (a) timbered areas which are more than 10 percent stocked with trees of any kind and size, and (b) areas from which timber has recently been removed to less than 10 percent by cutting, fire, or other cause but which have not been developed for other use -- such as pasture or crops. Areas in category (b) can ordinarily be recognized by general observation of the remaining stumps or snags. Areas in category (a) near the 10 percent minimum limit of stocking will need close examination to determine if they should, or should not, be classified as forest land.

Definitions

Forest land area includes all land in areas of 3 acres or more which is at least 10 percent stocked with trees of any size capable of producing timber or other woods products, or is capable of exerting an influence on the water regime; (b) land from which trees described in (a) have been removed to less than 10 percent stocking and which has not been developed for other use; (c) afforested area i.e., plantations on land not previously supporting forest cover and (d) chaparral area.[1/]

Nonforest land. Land which has never supported forest growth, land cleared to less than 10 percent stocking and developed for pasture, agriculture or other use, residential or industrial

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1/ Chaparral land area includes land supporting heavily branched dwarf trees or shrubs, usually evergreen, whose primary value is watershed protection. The crown canopy of mature stands in this cover type at maturity must cover 50 percent of the ground to qualify as forest land. The more common constituents of this type are species of Quercus, Cercocarpus, Garrya, Ceanothus, Arotostaphylos, and Adenostoma. Types dominated by such shrubs as Artemisia, Opunitia, Purshie, Cutierrezia, or semi-desert species are not considered forest land.

areas, or thickly populated suburban areas, and water areas from 3 to 40 acres in size 2/ or 120 to 600 feet width.

Stocking is the extent to which growing space is effectively utilized by trees. Degree of stocking is measured in terms of the percent of growing space occupied and means the ratio of actual stocking to full stocking. Stocking may be measured in terms of number of trees, volume of timber in the stand, cover canopy, or other characteristics.

In this survey, stocking will be determined chiefly on the basis of crown canopy of trees visible on aerial photographs. However, if the soil survey technician is using photos taken when trees were without leaves, or if there is a probability of seedling and sapling growth not visible on the photo, ground examination will have to be relied upon.

Classification and delineation of the forest land as defined may be done on the photos and on the ground in two steps:

Step 1. Examine sample areas on the photos and on the ground and exclude from consideration all areas that appear definitely to be non-forest land. See definitions on other classes of land.

Step 2. Examine the remaining unclassified areas on the photos to determine if they qualify as forest land as defined. On aerial photos the proportion of the land that is covered by the crowns of trees will be used to estimate the degree of stocking. A "crown density scale" (sample attached) may be used in making such an estimate. This scale is a diagrammatic picture of what different degrees of stocking look like on photos. The squares showing these stands represent one acre and the visible crown canopy indicates stocking of 5, 10, 15, 25 and 40 percent. The three squares placed vertically in each stocking class are intended to show the same percent stocking but with the tree crowns distributed differently. In using this scale, independently or in combination with ground examination, the observer should visualize the area of growing crowns projected to a canopy map. Small trees under large trees would not be visible. Growing space can be occupied only once in determining degree of stocking.

To delineate forest land on photos the following procedure is suggested as an illustration.

An examination of the three Sample Areas of 160 acres each (shown on Figure 1 attached) indicates that Sample Area 1 is nonforest land with the possible exception of a small patch in the lower left-hand corner.

2/ Bureau of the Census data for water area does not include bodies of less than 40 acres.

That patch should be field checked even though it appears to be forest. It could be orchard or some other nonforest cover. In Sample Area 1 there is a patch of forest near the middle, but it is less than 3 acres and would, for that reason, not be delineated as forest land.

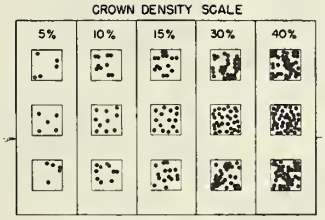
Sample Area 2 shows, in the upper part, a patch of timber certainly more than 10 percent stocked and larger than 3 acres. That patch qualifies as forest land and should be so delineated on the photo. The only question is, what part of the scattered tree area on the left should be included? A tentative delineation, based on the crown density chart, has been drawn in, but it would need checking by ground observation. In the part of Sample Area 2 three other patches of forest land have been delineated on the photo. Other patches with only scattering trees do not have a 10 percent crown canopy on the photos and would not qualify as forest land, unless ground examination shows that the land has recently been cut over or has sufficient seedling and saplings supplementing the visible crown cover to raise the stocking to 10 percent or more.

Field determination of stocking can be made by walking through an area in question to observe at specified intervals (not under crowns of trees visible in the photo) whether at least one well established seedling or sapling is present on a specified number of mil-acre (6.5 feet by 6.5 feet) plots along the route. For patches of land 3 to 10 acres in extent, examine 20 mil-acre plots at one-half chain (33-foot) intervals, for larger patches examine, 40 mil-acre plots at one-chain intervals. The percent stocked as indicated by crown canopy on the photo should be added to percent of mil-acre stocked with seedlings or saplings (not visible on the photo) to determine percent stocking of the patch in question.

Sample Area 3 is obviously mostly forest land, easily delineated except for two patches. Along the lower edge of the sample are two patches of forest more than 10 percent stocked but less than 3 acres in area. These are integral parts of a larger patch of forest outside the sample area, and should therefore be delineated to count as part of the forest land within the sample area

2-Attachments

CROWN DENSITY SCALE



PERCENT CROWN COVER

FOR USE WITH AERIAL PHOTOS, SCALE 1:15,840
(SAMPLE SQUARES EQUAL ONE ACRE)

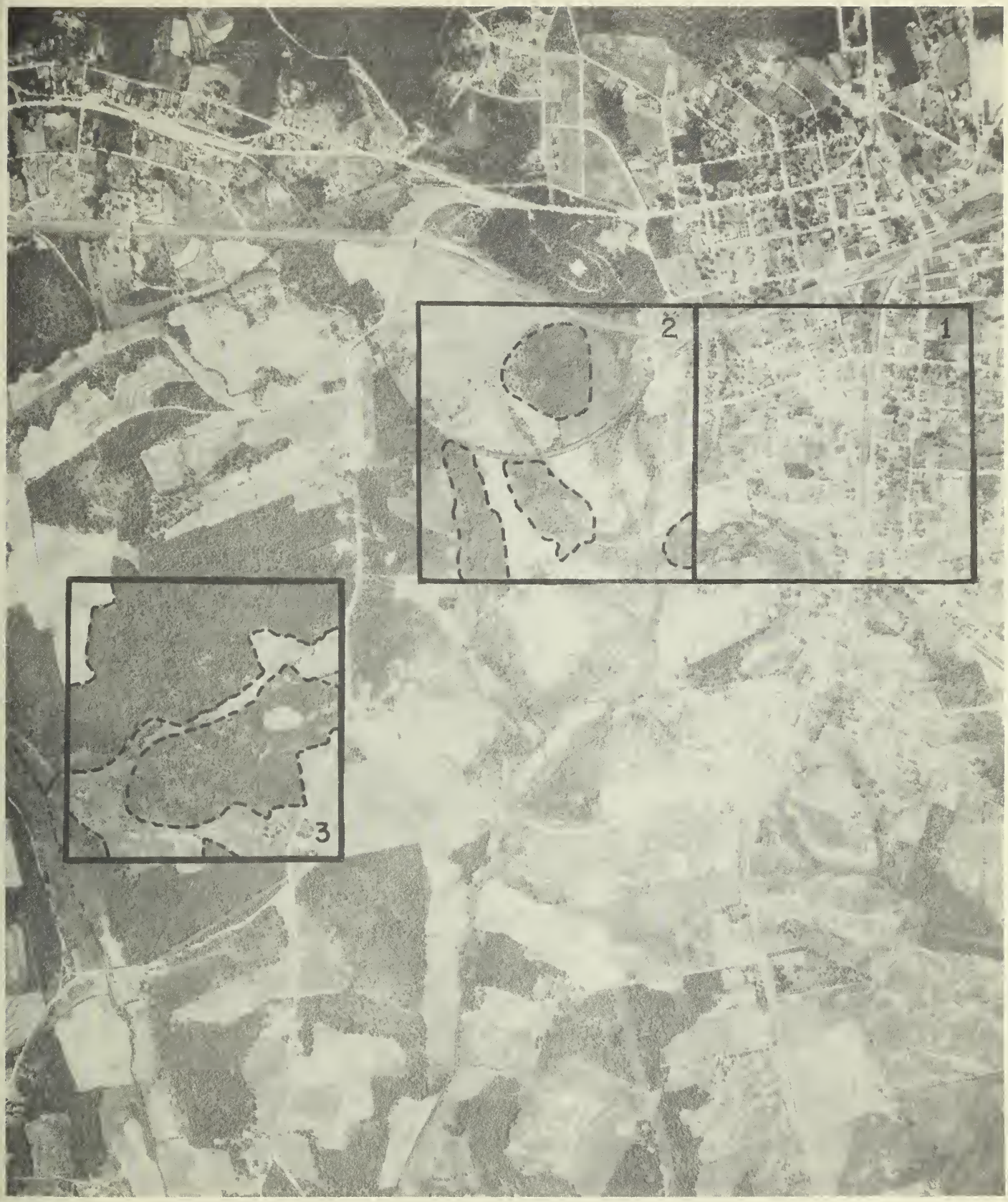


Figure 1 - SAMPLE PHOTO AREAS